

Release notes for ENDF/B Development n-074\_W\_180  
evaluation

**ENDF**  
**B-VII**.dev

April 26, 2017

• fizcon Warnings:

1. Threshold reaction, so covariance doesn't start at 10e-5 eV, FIZCON bug!  
*MAT=7425, MF=33, MT= 17 (1): Thresh. cov.*

```

ERROR(S) FOUND IN MAT=7425, MF=33, MT= 17
  ENERGY INCORRECT                      SEQUENCE NUMBER    3
    EXPECT  1.00000E-05, FIND  3.57170E+06

```

2. Threshold reaction, so covariance doesn't start at 10e-5 eV, FIZCON bug!  
*MAT=7425, MF=33, MT= 51 (1): Thresh. cov.*

```

ERROR(S) FOUND IN MAT=7425, MF=33, MT= 51
  ENERGY INCORRECT                      SEQUENCE NUMBER    6
    EXPECT  1.00000E-05, FIND  3.57170E+06

```

3. Cross-correlations with threshold reactions, so covariance doesn't start at 10e-5 eV, FIZCON bug!  
*MAT=7425, MF=33, MT=102 (1): X Thresh. cov.*

```

ERROR(S) FOUND IN MAT=7425, MF=33, MT=102
  ENERGY INCORRECT                      SEQUENCE NUMBER   13
    EXPECT  1.00000E-05, FIND  3.57170E+06

```

4. Threshold reaction, so covariance doesn't start at 10e-5 eV, FIZCON bug!  
*MAT=7425, MF=33, MT=851 (1): Thresh. cov.*

```

ERROR(S) FOUND IN MAT=7425, MF=33, MT=851
  ENERGY INCORRECT                      SEQUENCE NUMBER    1
    EXPECT  1.00000E-05, FIND  3.57170E+06
  ENERGY INCORRECT                      SEQUENCE NUMBER    1
    EXPECT  1.00000E-05, FIND  3.57170E+06
... [12 more lines]

```

5. Threshold reaction, so covariance doesn't start at 10e-5 eV, FIZCON bug!  
*MAT=7425, MF=33, MT=852 (1): Thresh. cov.*

```

ERROR(S) FOUND IN MAT=7425, MF=33, MT=852
  ENERGY INCORRECT                      SEQUENCE NUMBER    3
    EXPECT  1.00000E-05, FIND  1.79010E+06
  ENERGY INCORRECT                      SEQUENCE NUMBER    3
    EXPECT  1.00000E-05, FIND  7.81170E+00

```

6. Threshold reaction, so covariance doesn't start at 10e-5 eV, FIZCON bug!  
*MAT=7425, MF=33, MT=853 (1): Thresh. cov.*

```

ERROR(S) FOUND IN MAT=7425, MF=33, MT=853
  ENERGY INCORRECT                      SEQUENCE NUMBER    5
    EXPECT  1.00000E-05, FIND  1.79010E+06
  ENERGY INCORRECT                      SEQUENCE NUMBER    5
    EXPECT  1.00000E-05, FIND  7.81170E+00

```

7. Threshold reaction, so covariance doesn't start at 10e-5 eV, FIZCON bug!  
*MAT=7425, MF=33, MT=854 (1): Thresh. cov.*

```

ERROR(S) FOUND IN MAT=7425, MF=33, MT=854
ENERGY INCORRECT                               SEQUENCE NUMBER    5
  EXPECT 1.00000E-05, FIND 1.79010E+06
ENERGY INCORRECT                               SEQUENCE NUMBER    5
  EXPECT 1.00000E-05, FIND 7.81170E+00

```

8. Threshold reaction, so covariance doesn't start at 10e-5 eV, FIZCON bug!  
*MAT=7425, MF=33, MT=855 (1): Thresh. cov.*

```

ERROR(S) FOUND IN MAT=7425, MF=33, MT=855
ENERGY INCORRECT                               SEQUENCE NUMBER    1
  EXPECT 1.00000E-05, FIND 1.79010E+06
ENERGY INCORRECT                               SEQUENCE NUMBER    1
  EXPECT 1.00000E-05, FIND 1.79010E+06
... [2 more lines]

```

9. Threshold reaction, so covariance doesn't start at 10e-5 eV, FIZCON bug!  
*MAT=7425, MF=33, MT=856 (1): Thresh. cov.*

```

ERROR(S) FOUND IN MAT=7425, MF=33, MT=856
ENERGY INCORRECT                               SEQUENCE NUMBER    1
  EXPECT 1.00000E-05, FIND 7.81170E+00

```

- **psyche** Warnings:

1. Strength function in URR not in agreement with PSYCHE's expectations  
*FILE 2 / SECTION 151 / ISOTOPE MASS = 180. L = 0 / STRENGTH FUNCTION IS 9.01156E-05 / STRENGTH FUNCTION 9.01156E-05 / LIES OUTSIDE LIMITS 1.00000E-04 TO 6.00000E-04 (0): URR str. ftn.*

```

FILE 2
SECTION 151
  ISOTOPE MASS = 180. L = 0
    STRENGTH FUNCTION IS 9.01156E-05
      STRENGTH FUNCTION 9.01156E-05
... [1 more lines]

```

- **psyche** Errors:

1. A probability distribution is negative. This is bad.  
*FILE 4 / SECTION 2 / DISTRIBUTION IS NEGATIVE / FROM -5.0000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -8.9705E-06 (0): Neg. prob.*

```

FILE 4
SECTION 2
  DISTRIBUTION IS NEGATIVE
    FROM -5.0000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -8.9705E-06

```

2. A probability distribution is negative. This is bad.  
*FILE 4 / SECTION 51 / DISTRIBUTION IS NEGATIVE / FROM -9.9219E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.1921E-07 (0): Neg. prob.*

```

FILE 4
SECTION 51
  DISTRIBUTION IS NEGATIVE
    FROM -9.9219E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.1921E-07

```

3. A probability distribution is negative. This is bad.  
*FILE 4 / SECTION 51 / DISTRIBUTION IS NEGATIVE / FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00 (0): Neg. prob.*

```

FILE 4
  SECTION 51
    DISTRIBUTION IS NEGATIVE
      FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
      FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
... [6 more lines]

```

4. A probability distribution is negative. This is bad.  
*FILE 4 / SECTION 56 / DISTRIBUTION IS NEGATIVE / FROM -9.9976E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -2.0862E-07 (0): Neg. prob.*

```

FILE 4
  SECTION 56
    DISTRIBUTION IS NEGATIVE
      FROM -9.9976E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -2.0862E-07

```

5. A probability distribution is negative. This is bad.  
*FILE 4 / SECTION 56 / DISTRIBUTION IS NEGATIVE / FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00 (0): Neg. prob.*

```

FILE 4
  SECTION 56
    DISTRIBUTION IS NEGATIVE
      FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
      FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00

```

6. A probability distribution is negative. This is bad.  
*FILE 4 / SECTION 58 / DISTRIBUTION IS NEGATIVE / FROM -9.9989E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -2.9802E-08 (0): Neg. prob.*

```

FILE 4
  SECTION 58
    DISTRIBUTION IS NEGATIVE
      FROM -9.9989E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -2.9802E-08

```

7. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 750 / FROM -9.9219E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 2.9802E-07 (0): Neg. prob.*

```

FILE 6
  SECTION 5
    DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 750
      FROM -9.9219E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 2.9802E-07

```

8. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 750 / FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00 (0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 750
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
... [2 more lines]

```

9. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 869*  
*(0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 869
ENERGY BALANCE SUMMARY: Q = -8.41200E+06      ENERGY BALANCE SUMMARY: Q = -8.41200E+06
ENERGY BALANCE SUMMARY: Q = -1.53430E+07      ENERGY BALANCE SUMMARY: Q = -1.53430E+07

```

10. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 869*  
*/ ENERGY BALANCE SUMMARY: Q = -1.53430E+07 (0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 869
ENERGY BALANCE SUMMARY: Q = -1.53430E+07

```

11. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 380*  
*/ FROM 0.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -4.7054E-02*  
*(0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 380
FROM 0.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -4.7054E-02

```

12. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 380*  
*/ FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 380
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00

```

13. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 742*  
*/ FROM -9.9561E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 742
FROM -9.9561E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00

```

14. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 786 / FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.9244E-03 (0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 786
FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.9244E-03
```

15. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 786 / FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00 (0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 786
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
... [4 more lines]
```

16. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 924 / FROM -8.4895E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 4.7684E-07 (0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 924
FROM -8.4895E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 4.7684E-07
```

17. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 957 / FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 4.2319E-06 (0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 957
FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 4.2319E-06
```

18. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 957 / FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00 (0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 957
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
... [20 more lines]
```

19. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 968 /*

*FROM -9.6875E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.7881E-07 (0):  
Neg. prob.*

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 968  
FROM -9.6875E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.7881E-07

20. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 968 /  
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00  
(0): Neg. prob.*

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 968  
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00  
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00  
... [25 more lines]

21. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 968 /  
FROM -9.3750E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 9.5367E-07 (0):  
Neg. prob.*

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 968  
FROM -9.3750E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 9.5367E-07

22. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 935 /  
FROM -9.1260E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.1921E-07 (0):  
Neg. prob.*

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 935  
FROM -9.1260E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.1921E-07

23. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 968 /  
FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 2.3842E-06 (0):  
Neg. prob.*

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 968  
FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 2.3842E-06

24. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 880 /  
FROM -9.5991E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00  
(0): Neg. prob.*

- FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 880  
FROM -9.5991E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
25. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 924 / FROM -8.7500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 2.3842E-07 (0): Neg. prob.*
- FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 924  
FROM -8.7500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 2.3842E-07
26. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 924 / FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00 (0): Neg. prob.*
- FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 924  
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00  
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00  
... [4 more lines]
27. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 957 / FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -6.5565E-07 (0): Neg. prob.*
- FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 957  
FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -6.5565E-07
28. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 968 / FROM -8.7500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.2517E-06 (0): Neg. prob.*
- FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 968  
FROM -8.7500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.2517E-06
29. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 968 (0): Neg. prob.*
- FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 968  
ENERGY BALANCE SUMMARY: Q = -6.57000E+06 ENERGY BALANCE SUMMARY: Q = -6.57000E+06  
ENERGY BALANCE SUMMARY: Q = -2.41330E+07 ENERGY BALANCE SUMMARY: Q = -2.41330E+07



30. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 968*  
*/ ENERGY BALANCE SUMMARY: Q = -2.41330E+07 (0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 968
ENERGY BALANCE SUMMARY: Q = -2.41330E+07
```

31. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 226*  
*/ FROM -9.9901E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -2.9802E-08*  
*(0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 226
FROM -9.9901E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -2.9802E-08
```

32. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 134*  
*/ FROM -9.9993E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 134
FROM -9.9993E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
```

33. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 891*  
*/ FROM -6.2500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -6.5565E-07*  
*(0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 891
FROM -6.2500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -6.5565E-07
```

34. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 902 /*  
*FROM -8.7500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.1325E-06 (0):*  
*Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 902
FROM -8.7500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.1325E-06
```

35. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 902*  
*/ FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 902
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
... [9 more lines]

```

36. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 902*  
*(0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 902
ENERGY BALANCE SUMMARY: Q = -1.44700E+07      ENERGY BALANCE SUMMARY: Q = -1.44700E+07

```

37. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 902*  
*/ ENERGY BALANCE SUMMARY: Q = -1.44700E+07 (0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 902
ENERGY BALANCE SUMMARY: Q = -1.44700E+07

```

38. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 924*  
*/ FROM -9.9890E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 924
FROM -9.9890E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00

```

39. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 946 /*  
*FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 2.2054E-06 (0):*  
*Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 946
FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 2.2054E-06

```

40. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 946*  
*/ FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 946
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
... [29 more lines]

```

41. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 946*  
*(0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE
ENERGY BALANCE SUMMARY: Q = 0.00000E+00
ENERGY BALANCE SUMMARY: Q = 6.68100E+06
SEQUENCE NUMBER 946
ENERGY BALANCE SUMMARY: Q = 0.00000E+00
ENERGY BALANCE SUMMARY: Q = 6.68100E+06

```

42. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 946*  
*/ ENERGY BALANCE SUMMARY: Q = 6.68100E+06 (0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE
ENERGY BALANCE SUMMARY: Q = 6.68100E+06
SEQUENCE NUMBER 946

```

43. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 704*  
*/ FROM -9.9997E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE
FROM -9.9997E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
SEQUENCE NUMBER 704

```

44. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1012*  
*/ FROM -9.3750E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 4.7684E-07*  
*(0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE
FROM -9.3750E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 4.7684E-07
SEQUENCE NUMBER 1012

```

45. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1012*  
*/ FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

```

FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
SEQUENCE NUMBER 1012
... [20 more lines]

```

46. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1023*  
*/ FROM -8.1430E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 5.3644E-07*  
*(0): Neg. prob.*

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1023  
FROM -8.1430E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 5.3644E-07

47. A probability distribution is negative. This is bad.  
FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 891 /  
FROM -9.9923E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 5.9605E-08 (0):  
Neg. prob.

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 891  
FROM -9.9923E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 5.9605E-08

48. A probability distribution is negative. This is bad.  
FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 902 /  
FROM -9.9576E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 5.9605E-08 (0):  
Neg. prob.

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 902  
FROM -9.9576E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 5.9605E-08

49. A probability distribution is negative. This is bad.  
FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 935 /  
FROM -9.9966E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00  
(0): Neg. prob.

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 935  
FROM -9.9966E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00

50. A probability distribution is negative. This is bad.  
FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 946 /  
FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 3.4571E-06 (0):  
Neg. prob.

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 946  
FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 3.4571E-06

51. A probability distribution is negative. This is bad.  
FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 979 /  
FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 2.0862E-06 (0):  
Neg. prob.

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 979  
FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 2.0862E-06

52. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 979*  
*/ FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 979
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
... [24 more lines]
```

53. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 990 /*  
*FROM -8.7500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.0133E-06 (0):*  
*Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 990
FROM -8.7500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.0133E-06
```

54. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 990*  
*/ FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 990
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
... [16 more lines]
```

55. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1001*  
*/ FROM -8.7500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -1.5795E-06*  
*(0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 1001
FROM -8.7500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -1.5795E-06
```

56. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1001*  
*/ FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 1001
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
... [2 more lines]
```

57. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1023*  
*/ FROM -9.3750E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 2.3842E-07*  
*(0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 1023
FROM -9.3750E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 2.3842E-07
```

58. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1023*  
*/ FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 1023
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
... [16 more lines]
```

59. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 924 /*  
*FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.0371E-05 (0):*  
*Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 924
FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.0371E-05
```

60. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 979 /*  
*FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 2.2054E-06 (0):*  
*Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 979
FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 2.2054E-06
```

61. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 990*  
*/ FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -3.3081E-06*  
*(0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 990
FROM -7.5000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -3.3081E-06
```

62. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1023*  
*/ FROM -5.0000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.1325E-06*  
*(0): Neg. prob.*

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1023  
FROM -5.0000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 1.1325E-06

63. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 880*  
*/ FROM -9.3750E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 880  
FROM -9.3750E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00

64. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 880*  
*/ FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 880  
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00  
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00

65. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 946*  
*/ FROM -9.3750E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -8.3447E-07*  
*(0): Neg. prob.*

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 946  
FROM -9.3750E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -8.3447E-07

66. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 979*  
*/ FROM -8.7500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 5.3644E-07 (0):*  
*Neg. prob.*

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 979  
FROM -8.7500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 5.3644E-07

67. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1001*  
*/ FROM -4.3750E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 4.0531E-06*  
*(0): Neg. prob.*

FILE 6  
SECTION 5  
DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1001  
FROM -4.3750E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS 4.0531E-06

68. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1012*  
*/ FROM -8.7500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -2.3842E-06*  
*(0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 1012
FROM -8.7500E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -2.3842E-06
```

69. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1045*  
*/ FROM -5.0000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -1.6689E-06*  
*(0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 1045
FROM -5.0000E-01 TO -1.0000E+00 NEGATIVE PROBABILITY IS -1.6689E-06
```

70. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1045*  
*/ FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00*  
*(0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 1045
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
FROM -1.0000E+00 TO -1.0000E+00 NEGATIVE PROBABILITY IS -0.0000E+00
... [5 more lines]
```

71. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1045*  
*(0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 1045
ENERGY BALANCE SUMMARY: Q = 7.40000E+04      ENERGY BALANCE SUMMARY: Q = 7.40000E+04
ENERGY BALANCE SUMMARY: Q = 8.89300E+06      ENERGY BALANCE SUMMARY: Q = 8.89300E+06
```

72. A probability distribution is negative. This is bad.  
*FILE 6 / SECTION 5 / DISTRIBUTION IS NEGATIVE SEQUENCE NUMBER 1045*  
*/ ENERGY BALANCE SUMMARY: Q = 8.89300E+06 (0): Neg. prob.*

```
FILE 6
SECTION 5
DISTRIBUTION IS NEGATIVE                      SEQUENCE NUMBER 1045
ENERGY BALANCE SUMMARY: Q = 8.89300E+06
```

- fudge-4.0 Warnings:

1. Missing a channel with a particular angular momenta combination  
*resonances / resolved / MultiLevelBreitWigner (Error # 0): missingResonanceChannel*



WARNING: Missing a channel with angular momenta combination  $L = 0$ ,  $J = 1.5$  and  $S = 1.5$  for "capture"

2. Potential scattering hasn't converted, you need more L's!  
*resonances / resolved (Error # 1): potentialScatteringNotConverged*

WARNING: Potential scattering hasn't converged by  $L=0$  at  $E=100.0$  eV,  $xs[0]/xs[0]=100.0\% > 0.1\%$

3. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 1 ( $n + W180$ ): / Form 'eval': (Error # 0): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

4. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 28 ( $W181 + \gamma$ ): / Form 'eval': (Error # 0): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

5. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 56 ( $n + W180$  [angular distribution]): / Form 'eval': (Error # 2): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

6. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 57 ( $n + W180_{e1}$  [angular distribution]): / Form 'eval': (Error # 2): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

- fudge-4.0 Errors:

1. Found a negative probability  
*reaction label 0:  $n + W180$  / Product:  $n$  / Distribution: / angularTwoBody - regions2d: / region index 0: XYs2d (Error # 0): Negative prob.*

WARNING: Negative probabilities encountered. Incident energy: 5.e7 eV, worst case: -5.41007897098e-06

WARNING: Negative probabilities encountered. Incident energy: 5.5e7 eV, worst case: -1.93067242617e-05

WARNING: Negative probabilities encountered. Incident energy: 6.e7 eV, worst case: -5.7889664099e-06

WARNING: Negative probabilities encountered. Incident energy: 7.e7 eV, worst case: -6.43917489851e-06

2. Found a negative probability  
*reaction label 1:  $n + W180_{e1}$  / Product:  $n$  / Distribution: / angularTwoBody - XYs2d: (Error # 0): Negative prob.*

WARNING: Negative probabilities encountered. Incident energy: 1.15e8 eV, worst case: -7.90627931518e-05

WARNING: Negative probabilities encountered. Incident energy: 1.3e8 eV, worst case: -5.96673071637e-05

WARNING: Negative probabilities encountered. Incident energy: 1.5e8 eV, worst case: -0.000105919692942

3. Found a negative probability  
*reaction label 5:  $n + W180_{e5}$  / Product:  $n$  / Distribution: / angularTwoBody - XYs2d: (Error # 0): Negative prob.*

- WARNING: Negative probabilities encountered. Incident energy: 9.e7 eV, worst case: -2.3596133627e-07  
 WARNING: Negative probabilities encountered. Incident energy: 1.15e8 eV, worst case: -6.48427487214e-06  
 WARNING: Negative probabilities encountered. Incident energy: 1.3e8 eV, worst case: -4.6316167477e-05  
 WARNING: Negative probabilities encountered. Incident energy: 1.5e8 eV, worst case: -9.05779447261e-05
4. Found a negative probability  
*reaction label 6: n + W180.e6 / Product: n / Distribution: / angularTwoBody - XYs2d:*  
*(Error # 0): Negative prob.*
- WARNING: Negative probabilities encountered. Incident energy: 1.3e8 eV, worst case: -3.49349998937e-07  
 WARNING: Negative probabilities encountered. Incident energy: 1.5e8 eV, worst case: -1.52721249997e-05
5. Found a negative probability  
*reaction label 8: n + W180.e8 / Product: n / Distribution: / angularTwoBody - XYs2d:*  
*(Error # 0): Negative prob.*
- WARNING: Negative probabilities encountered. Incident energy: 7.e7 eV, worst case: -1.00414000007e-05  
 WARNING: Negative probabilities encountered. Incident energy: 1.5e8 eV, worst case: -5.8782643217e-07
6. If an outgoing energy distribution ends with more than one energy with probability=0, proper unitbase treatment is unclear. Distribution should end with exactly one P=0 point.  
*reaction label 9: n + (W180.c -> W180 + gamma) / Product: n / Distribution: / energyAngular - XYs3d: (Error # 0): extraOutgoingEnergy*
- WARNING: Extra zero-probability outgoing energies found at incident energy 4.e7 eV  
 WARNING: Extra zero-probability outgoing energies found at incident energy 4.5e7 eV  
 WARNING: Extra zero-probability outgoing energies found at incident energy 5.e7 eV  
 WARNING: Extra zero-probability outgoing energies found at incident energy 5.5e7 eV  
 ... plus 5 more instances of this message
7. Found a negative probability  
*reaction label 9: n + (W180.c -> W180 + gamma) / Product: n / Distribution: (Error # 1): Negative prob.*
- WARNING: Negative probabilities encountered. Incident energy: 9.e7 eV, worst case: -1.68331958384e-13  
 WARNING: Negative probabilities encountered. Incident energy: 1.e8 eV, worst case: -2.13858357442e-12  
 WARNING: Negative probabilities encountered. Incident energy: 1.3e8 eV, worst case: -1.05587055469e-13  
 WARNING: Negative probabilities encountered. Incident energy: 1.5e8 eV, worst case: -1.11748358957e-13
8. Calculated and tabulated Q values disagree.  
*reaction label 10: n[multiplicity:'2'] + W179 + gamma (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: -8456088.279724121 eV vs -8.412e6 eV!
9. Found a negative probability  
*reaction label 10: n[multiplicity:'2'] + W179 + gamma / Product: n / Distribution: / energyAngular - XYs3d: (Error # 0): Negative prob.*
- WARNING: Negative probabilities encountered. Incident energy: 9.e7 eV, worst case: -6.01627378027e-13  
 WARNING: Negative probabilities encountered. Incident energy: 1.15e8 eV, worst case: -3.43425028592e-14  
 WARNING: Negative probabilities encountered. Incident energy: 1.3e8 eV, worst case: -2.41243783185e-13  
 WARNING: Negative probabilities encountered. Incident energy: 1.5e8 eV, worst case: -5.51843907396e-12
10. Calculated and tabulated Q values disagree.  
*reaction label 11: n[multiplicity:'3'] + W178 + gamma (Error # 0): Q mismatch*

- WARNING: Calculated and tabulated Q-values disagree: -15033045.83065796 eV vs -1.5343e7 eV!
11. Found a negative probability  
*reaction label 11: n[multiplicity:'3'] + W178 + gamma / Product: n / Distribution: / energyAngular - XYs3d: (Error # 0): Negative prob.*

WARNING: Negative probabilities encountered. Incident energy: 1.3e8 eV, worst case: -3.68320285995e-14  
WARNING: Negative probabilities encountered. Incident energy: 1.5e8 eV, worst case: -3.19135722121e-14
  12. Calculated and tabulated Q values disagree.  
*reaction label 12: n[multiplicity:'4'] + W177 + gamma (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: -24428699.47485352 eV vs -2.4133e7 eV!
  13. If an outgoing energy distribution ends with more than one energy with probability=0, proper unitbase treatment is unclear. Distribution should end with exactly one P=0 point.  
*reaction label 12: n[multiplicity:'4'] + W177 + gamma / Product: n / Distribution: / energyAngular - XYs3d: (Error # 0): extraOutgoingEnergy*

WARNING: Extra zero-probability outgoing energies found at incident energy 1.3e8 eV  
WARNING: Extra zero-probability outgoing energies found at incident energy 1.5e8 eV
  14. Calculated and tabulated Q values disagree.  
*reaction label 13: n + H1 + Ta179 + gamma (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: -6733726.617370605 eV vs -6.57e6 eV!
  15. Found a negative probability  
*reaction label 13: n + H1 + Ta179 + gamma / Product: n / Distribution: / energyAngular - XYs3d: (Error # 0): Negative prob.*

WARNING: Negative probabilities encountered. Incident energy: 6.e7 eV, worst case: -1.898545e-30  
WARNING: Negative probabilities encountered. Incident energy: 9.e7 eV, worst case: -9.01953828242e-21  
WARNING: Negative probabilities encountered. Incident energy: 1.e8 eV, worst case: -1.31617731022e-30  
WARNING: Negative probabilities encountered. Incident energy: 1.15e8 eV, worst case: -1.00187866167e-29  
... plus 2 more instances of this message
  16. Found a negative probability  
*reaction label 13: n + H1 + Ta179 + gamma / Product: H1 / Distribution: / energyAngular - XYs3d: (Error # 0): Negative prob.*

WARNING: Negative probabilities encountered. Incident energy: 1.e8 eV, worst case: -3.91013618581e-15  
WARNING: Negative probabilities encountered. Incident energy: 1.15e8 eV, worst case: -1.21693135518e-12  
WARNING: Negative probabilities encountered. Incident energy: 1.3e8 eV, worst case: -7.62843453725e-12  
WARNING: Negative probabilities encountered. Incident energy: 1.5e8 eV, worst case: -1.85283403456e-11
  17. Calculated and tabulated Q values disagree.  
*reaction label 14: H1 + Ta180 (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: -156769.0664672852 eV vs 7.4e4 eV!
  18. Calculated and tabulated Q values disagree.  
*reaction label 15: H1 + Ta180\_e1 (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: -198769.0664672852 eV vs 3.2e4 eV!

19. Calculated and tabulated Q values disagree.  
*reaction label 16: H1 + Ta180-e2 (Error # 0): Q mismatch*  
  
WARNING: Calculated and tabulated Q-values disagree: -232069.0664672852 eV vs -1.3e3 eV!
20. Calculated and tabulated Q values disagree.  
*reaction label 17: H1 + Ta180-e3 (Error # 0): Q mismatch*  
  
WARNING: Calculated and tabulated Q-values disagree: -267769.0664672852 eV vs -3.7e4 eV!
21. Calculated and tabulated Q values disagree.  
*reaction label 18: H1 + Ta180-e4 (Error # 0): Q mismatch*  
  
WARNING: Calculated and tabulated Q-values disagree: -332769.0664672852 eV vs -1.02e5 eV!
22. Calculated and tabulated Q values disagree.  
*reaction label 19: H1 + Ta180-e5 (Error # 0): Q mismatch*  
  
WARNING: Calculated and tabulated Q-values disagree: -343769.0664672852 eV vs -1.13e5 eV!
23. Calculated and tabulated Q values disagree.  
*reaction label 20: H1 + Ta180-e6 (Error # 0): Q mismatch*  
  
WARNING: Calculated and tabulated Q-values disagree: -387769.0664672852 eV vs -1.57e5 eV!
24. Calculated and tabulated Q values disagree.  
*reaction label 21: H1 + Ta180-e7 (Error # 0): Q mismatch*  
  
WARNING: Calculated and tabulated Q-values disagree: -414769.0664672852 eV vs -1.84e5 eV!
25. Calculated and tabulated Q values disagree.  
*reaction label 22: H1 + Ta180-e8 (Error # 0): Q mismatch*  
  
WARNING: Calculated and tabulated Q-values disagree: -441769.0664672852 eV vs -2.11e5 eV!
26. Calculated and tabulated Q values disagree.  
*reaction label 23: H1 + Ta180-e9 (Error # 0): Q mismatch*  
  
WARNING: Calculated and tabulated Q-values disagree: -465769.0664672852 eV vs -2.35e5 eV!
27. Calculated and tabulated Q values disagree.  
*reaction label 24: H1 + Ta180-e10 (Error # 0): Q mismatch*  
  
WARNING: Calculated and tabulated Q-values disagree: -476769.0664672852 eV vs -2.46e5 eV!
28. Calculated and tabulated Q values disagree.  
*reaction label 25: H1 + Ta180-e11 (Error # 0): Q mismatch*  
  
WARNING: Calculated and tabulated Q-values disagree: -517769.0664672852 eV vs -2.87e5 eV!
29. Calculated and tabulated Q values disagree.  
*reaction label 26: H1 + Ta180-e12 (Error # 0): Q mismatch*  
  
WARNING: Calculated and tabulated Q-values disagree: -524769.0664672852 eV vs -2.94e5 eV!

30. Calculated and tabulated Q values disagree.  
*reaction label 27: H1 + Ta180-e13 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: -570769.0664672852 eV vs -3.4e5 eV!
31. Calculated and tabulated Q values disagree.  
*reaction label 28: H1 + Ta180-e14 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: -582769.0664672852 eV vs -3.52e5 eV!
32. Calculated and tabulated Q values disagree.  
*reaction label 29: H1 + (Ta180\_c -> Ta180 + gamma) (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: -582769.0664672852 eV vs -3.52e5 eV!
33. Found a negative probability  
*reaction label 29: H1 + (Ta180\_c -> Ta180 + gamma) / Product: H1 / Distribution: / energyAngular - XYs3d: (Error # 0): Negative prob.*
- WARNING: Negative probabilities encountered. Incident energy: 8.e7 eV, worst case: -3.79225345509e-15  
 WARNING: Negative probabilities encountered. Incident energy: 1.e8 eV, worst case: -5.6890541408e-12  
 WARNING: Negative probabilities encountered. Incident energy: 1.15e8 eV, worst case: -1.09797173844e-11  
 WARNING: Negative probabilities encountered. Incident energy: 1.3e8 eV, worst case: -1.70637321621e-11  
 ... plus 1 more instances of this message
34. Calculated and tabulated Q values disagree.  
*reaction label 30: He4 + Hf177 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 9191152.534484863 eV vs 8.893e6 eV!
35. Calculated and tabulated Q values disagree.  
*reaction label 31: He4 + Hf177-e1 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 9078202.534484863 eV vs 8780050. eV!
36. Calculated and tabulated Q values disagree.  
*reaction label 32: He4 + Hf177-e2 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 8941482.534484863 eV vs 8643330. eV!
37. Calculated and tabulated Q values disagree.  
*reaction label 33: He4 + Hf177-e3 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 8869832.534484863 eV vs 8571680. eV!
38. Calculated and tabulated Q values disagree.  
*reaction label 34: He4 + Hf177-e4 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 8816152.534484863 eV vs 8.518e6 eV!
39. Calculated and tabulated Q values disagree.  
*reaction label 35: He4 + Hf177-e5 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 8801152.534484863 eV vs 8.503e6 eV!

40. Calculated and tabulated Q values disagree.  
*reaction label 36: He4 + Hf177\_e6 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 8781742.534484863 eV vs 8483590. eV!
41. Calculated and tabulated Q values disagree.  
*reaction label 37: He4 + Hf177\_e7 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 8764472.534484863 eV vs 8466320. eV!
42. Calculated and tabulated Q values disagree.  
*reaction label 38: He4 + Hf177\_e8 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 8732152.534484863 eV vs 8.434e6 eV!
43. Calculated and tabulated Q values disagree.  
*reaction label 39: He4 + Hf177\_e9 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 8683052.534484863 eV vs 8.3849e6 eV!
44. Calculated and tabulated Q values disagree.  
*reaction label 40: He4 + Hf177\_e10 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 8635972.534484863 eV vs 8337820. eV!
45. Calculated and tabulated Q values disagree.  
*reaction label 41: He4 + Hf177\_e11 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 8631752.534484863 eV vs 8.3336e6 eV!
46. Calculated and tabulated Q values disagree.  
*reaction label 42: He4 + Hf177\_e12 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 8599832.534484863 eV vs 8301680. eV!
47. Calculated and tabulated Q values disagree.  
*reaction label 43: He4 + Hf177\_e13 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 8586752.534484863 eV vs 8.2886e6 eV!
48. Calculated and tabulated Q values disagree.  
*reaction label 44: He4 + Hf177\_e14 (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 8583152.534484863 eV vs 8.285e6 eV!
49. Calculated and tabulated Q values disagree.  
*reaction label 45: He4 + (Hf177\_c -> Hf177 + gamma) (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 8583152.534484863 eV vs 8.285e6 eV!
50. Calculated and tabulated Q values disagree.  
*reaction label 46: W181 + gamma (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 6797392.13482666 eV vs 6.681e6 eV!

51. Calculated and tabulated Q values disagree.  
*reaction label 47: n[multiplicity:'2'] + H1 + Ta178 + gamma (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: -14250249.53271484 eV vs -1.447e7 eV!

52. Found a negative probability  
*reaction label 47: n[multiplicity:'2'] + H1 + Ta178 + gamma / Product: n / Distribution: / energyAngular - XYs3d: (Error # 0): Negative prob.*

WARNING: Negative probabilities encountered. Incident energy: 1.5e8 eV, worst case: -4.18635000101e-17

53. Found a negative probability  
*reaction label 47: n[multiplicity:'2'] + H1 + Ta178 + gamma / Product: H1 / Distribution: / energyAngular - XYs3d: (Error # 0): Negative prob.*

WARNING: Negative probabilities encountered. Incident energy: 1.e8 eV, worst case: -7.52500000002e-14

WARNING: Negative probabilities encountered. Incident energy: 1.5e8 eV, worst case: -7.85996656368e-12

54. If an outgoing energy distribution ends with more than one energy with probability=0, proper unitbase treatment is unclear. Distribution should end with exactly one P=0 point.  
*reaction label 47: n[multiplicity:'2'] + H1 + Ta178 + gamma / Product: H1 / Distribution: (Error # 1): extraOutgoingEnergy*

WARNING: Extra zero-probability outgoing energies found at incident energy 1.e8 eV

WARNING: Extra zero-probability outgoing energies found at incident energy 1.15e8 eV

WARNING: Extra zero-probability outgoing energies found at incident energy 1.5e8 eV

55. Since the min allowed variance is 0, this means really you have a negative variance!!!!  
*Section 56 (n + W180 [angular distribution]): / Form 'eval': / LegendreLValue L=1 vs 1 (Error # 0): Very small variance*

WARNING: Encountered very small variance (-7.944930e-05%) at index 57.

WARNING: Encountered very small variance (-1.043400e-04%) at index 60.

WARNING: Encountered very small variance (-7.156840e-05%) at index 63.

WARNING: Encountered very small variance (-9.734930e-05%) at index 64.

... plus 6 more instances of this message

56. A covariance matrix was not positive semi-definite, so it has negative eigenvalues.  
*Section 56 (n + W180 [angular distribution]): / Form 'eval': (Error # 1): Bad evs*

WARNING: 20 negative eigenvalues! Worst case = -3.167069e-02

57. Since the min allowed variance is 0, this means really you have a negative variance!!!!  
*Section 57 (n + W180\_e1 [angular distribution]): / Form 'eval': / LegendreLValue L=1 vs 1 (Error # 0): Very small variance*

WARNING: Encountered very small variance (-1.836110e-03%) at index 5.

WARNING: Encountered very small variance (-2.873690e-03%) at index 11.

WARNING: Encountered very small variance (-9.620700e-04%) at index 12.

WARNING: Encountered very small variance (-2.494120e-03%) at index 16.

... plus 13 more instances of this message

58. A covariance matrix was not positive semi-definite, so it has negative eigenvalues.  
*Section 57 (n + W180\_e1 [angular distribution]): / Form 'eval': (Error # 1): Bad evs*

WARNING: 13 negative eigenvalues! Worst case = -1.293740e-01

• njoy2012 Warnings:

1. Evaluation has no unresolved resonance parameters given  
*unresr...calculation of unresolved resonance cross sections (0): No URR*

```
---message from unresr---mat 7425 has no unresolved parameters  
copy as is to nout
```

2. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (0): HEATR/hinit (4)*

```
---message from hinit---mf6, mt102 does not give recoil za= 74181  
photon momentum recoil used.
```

3. Evaluation has no unresolved resonance parameters given  
*purrr...probabalistic unresolved calculation (0): No URR*

```
---message from purrr---mat 7425 has no unresolved parameters  
copy as is to nout
```

4. The number of coefficients was too large in a covariance  
*covr...process covariance data (1): Cov:Too many coeff.*

```
---message from matshd--- 447 coefficients > 2  
reset and continue
```

5. The number of coefficients was too large in a covariance  
*covr...process covariance data (2): Cov:Too many coeff.*

```
---message from matshd--- 447 coefficients > 2  
reset and continue
```

6. The number of coefficients is too big.  
*covr...process covariance data (3): COVR/matshd (3)*

```
---message from matshd--- 92 coefficients > 2  
reset and continue
```

7. The number of coefficients was too large in a covariance  
*covr...process covariance data (4): Cov:Too many coeff.*

```
---message from matshd--- 263 coefficients > 2  
reset and continue
```

8. The number of coefficients was too large in a covariance  
*covr...process covariance data (5): Cov:Too many coeff.*

```
---message from matshd--- 447 coefficients > 2  
reset and continue
```

9. The number of coefficients was too large in a covariance  
*covr...process covariance data (6): Cov:Too many coeff.*

```
---message from matshd--- 112 coefficients > 2  
reset and continue
```



10. The number of coefficients is too big.  
*covr...process covariance data (7): COVR/matshd (3)*

```

---message from matshd--- 97 coefficients > 2
reset and continue

```
11. Coefficient mismatch of some sort  
*covr...process covariance data (8): COVR/matshd (2)*

```

---message from matshd---processing of mat/mt 7425/ 17 vs. mat1/mt1 7425/853
largest coefficient= -4.50007E+03 at index 582 470

```
12. The number of coefficients is too big.  
*covr...process covariance data (9): COVR/matshd (3)*

```

---message from matshd--- 1 coefficients > 1
reset and continue.

```
13. The number of coefficients was too large in a covariance  
*covr...process covariance data (10): Cov:Too many coeff.*

```

---message from matshd--- 225 coefficients > 2
reset and continue

```
14. The number of coefficients was too large in a covariance  
*covr...process covariance data (11): Cov:Too many coeff.*

```

---message from matshd--- 207 coefficients > 2
reset and continue

```
15. The number of coefficients was too large in a covariance  
*covr...process covariance data (12): Cov:Too many coeff.*

```

---message from matshd--- 127 coefficients > 2
reset and continue

```
16. The number of coefficients was too large in a covariance  
*covr...process covariance data (13): Cov:Too many coeff.*

```

---message from matshd--- 182 coefficients > 2
reset and continue

```
17. Coefficient mismatch of some sort  
*covr...process covariance data (14): COVR/matshd (2)*

```

---message from matshd---processing of mat/mt 7425/851 vs. mat1/mt1 7425/851
largest coefficient= 1.29602E+00 at index 479 487

```
18. The number of coefficients is too big.  
*covr...process covariance data (15): COVR/matshd (3)*

```

---message from matshd--- 28 coefficients > 1
reset and continue.

```
19. Coefficient mismatch of some sort  
*covr...process covariance data (16): COVR/matshd (2)*

- message from matshd---processing of mat/mt 7425/855 vs. mat1/mt1 7425/855  
largest coefficient= 7.43328E+00 at index 462 469
20. The number of coefficients is too big.  
*covr...process covariance data (17): COVR/matshd (3)*
- message from matshd--- 14 coefficients > 1  
reset and continue.
21. The number of coefficients is too big.  
*covr...process covariance data (18): COVR/matshd (3)*
- message from matshd--- 16 coefficients > 2  
reset and continue

• njoy2012 Errors:

1. An angular distribution is negative  
*acer...monte carlo neutron and photon data (0): Neg. P(Ej $\mu$ ) (b)*

---message from ptleg2---negative probs found  
3 for mt= 2 e= 5.000E+07

2. An angular distribution is negative  
*acer...monte carlo neutron and photon data (1): Neg. P(Ej $\mu$ ) (b)*

---message from ptleg2---negative probs found  
7 for mt= 2 e= 5.500E+07

3. An angular distribution is negative  
*acer...monte carlo neutron and photon data (2): Neg. P(Ej $\mu$ ) (b)*

---message from ptleg2---negative probs found  
6 for mt= 2 e= 6.000E+07

4. An angular distribution is negative  
*acer...monte carlo neutron and photon data (3): Neg. P(Ej $\mu$ ) (b)*

---message from ptleg2---negative probs found  
6 for mt= 2 e= 7.000E+07

5. An angular distribution is negative  
*acer...monte carlo neutron and photon data (4): Neg. P(Ej $\mu$ ) (b)*

---message from ptleg2---negative probs found  
45 for mt= 51 e= 1.150E+08

6. An angular distribution is negative  
*acer...monte carlo neutron and photon data (5): Neg. P(Ej $\mu$ ) (b)*

---message from ptleg2---negative probs found  
45 for mt= 51 e= 1.300E+08

7. An angular distribution is negative  
*acer...monte carlo neutron and photon data (6): Neg. P(Ej $\mu$ ) (b)*

- message from ptleg2---negative probs found  
52 for mt= 51 e= 1.500E+08
8. An angular distribution is negative  
*acer...monte carlo neutron and photon data (7): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
1 for mt= 55 e= 9.000E+07
9. An angular distribution is negative  
*acer...monte carlo neutron and photon data (8): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
21 for mt= 55 e= 1.300E+08
10. An angular distribution is negative  
*acer...monte carlo neutron and photon data (9): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
46 for mt= 55 e= 1.500E+08
11. An angular distribution is negative  
*acer...monte carlo neutron and photon data (10): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
1 for mt= 56 e= 1.300E+08
12. An angular distribution is negative  
*acer...monte carlo neutron and photon data (11): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
4 for mt= 56 e= 1.500E+08
13. An angular distribution is negative  
*acer...monte carlo neutron and photon data (12): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
1 for mt= 58 e= 7.000E+07
14. An angular distribution is negative  
*acer...monte carlo neutron and photon data (13): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
1 for mt= 58 e= 1.500E+08
15. An angular distribution is negative  
*acer...monte carlo neutron and photon data (14): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
1 for mt= 16 e= 7.934E+01
16. An angular distribution is negative  
*acer...monte carlo neutron and photon data (15): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
1 for mt= 16 e= 1.049E+02

17. An angular distribution is negative  
*acer...monte carlo neutron and photon data (16): Neg.  $P(Ej\mu)$  (b)*  

```

---message from ptleg2---negative probs found
      5 for mt= 16 e= 1.152E+02

```
18. An angular distribution is negative  
*acer...monte carlo neutron and photon data (17): Neg.  $P(Ej\mu)$  (b)*  

```

---message from ptleg2---negative probs found
      4 for mt= 16 e= 1.166E+02

```
19. An angular distribution is negative  
*acer...monte carlo neutron and photon data (18): Neg.  $P(Ej\mu)$  (b)*  

```

---message from ptleg2---negative probs found
      1 for mt= 16 e= 1.229E+02

```
20. An angular distribution is negative  
*acer...monte carlo neutron and photon data (19): Neg.  $P(Ej\mu)$  (b)*  

```

---message from ptleg2---negative probs found
      1 for mt= 16 e= 1.291E+02

```
21. An angular distribution is negative  
*acer...monte carlo neutron and photon data (20): Neg.  $P(Ej\mu)$  (b)*  

```

---message from ptleg2---negative probs found
     12 for mt= 16 e= 1.322E+02

```
22. An angular distribution is negative  
*acer...monte carlo neutron and photon data (21): Neg.  $P(Ej\mu)$  (b)*  

```

---message from ptleg2---negative probs found
     60 for mt= 16 e= 1.338E+02

```
23. An angular distribution is negative  
*acer...monte carlo neutron and photon data (22): Neg.  $P(Ej\mu)$  (b)*  

```

---message from ptleg2---negative probs found
     60 for mt= 16 e= 1.353E+02

```
24. An angular distribution is negative  
*acer...monte carlo neutron and photon data (23): Neg.  $P(Ej\mu)$  (b)*  

```

---message from ptleg2---negative probs found
      3 for mt= 17 e= 1.098E+02

```
25. An angular distribution is negative  
*acer...monte carlo neutron and photon data (24): Neg.  $P(Ej\mu)$  (b)*  

```

---message from ptleg2---negative probs found
      3 for mt= 17 e= 1.291E+02

```
26. An angular distribution is negative  
*acer...monte carlo neutron and photon data (25): Neg.  $P(Ej\mu)$  (b)*

- message from ptleg2---negative probs found  
245 for mt= 28 e= 5.053E+01
27. An angular distribution is negative  
*acer...monte carlo neutron and photon data (26): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
1 for mt= 28 e= 7.934E+01
28. An angular distribution is negative  
*acer...monte carlo neutron and photon data (27): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
276 for mt= 28 e= 9.080E+01
29. An angular distribution is negative  
*acer...monte carlo neutron and photon data (28): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
256 for mt= 28 e= 1.049E+02
30. An angular distribution is negative  
*acer...monte carlo neutron and photon data (29): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
1 for mt= 28 e= 1.139E+02
31. An angular distribution is negative  
*acer...monte carlo neutron and photon data (30): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
407 for mt= 28 e= 1.206E+02
32. An angular distribution is negative  
*acer...monte carlo neutron and photon data (31): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
3 for mt= 28 e= 1.182E+02
33. An angular distribution is negative  
*acer...monte carlo neutron and photon data (32): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
6 for mt= 28 e= 1.306E+02
34. An angular distribution is negative  
*acer...monte carlo neutron and photon data (33): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
50 for mt= 28 e= 1.322E+02
35. An angular distribution is negative  
*acer...monte carlo neutron and photon data (34): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
4 for mt= 28 e= 1.338E+02

36. An angular distribution is negative  
*acer...monte carlo neutron and photon data (35): Neg.  $P(Ej\mu)$  (b)*
- ```

---message from ptleg2---negative probs found
      44 for mt= 28 e= 1.353E+02

```
37. An angular distribution is negative  
*acer...monte carlo neutron and photon data (36): Neg.  $P(Ej\mu)$  (b)*
- ```

---message from ptleg2---negative probs found
      3 for mt= 28 e= 1.369E+02

```
38. An angular distribution is negative  
*acer...monte carlo neutron and photon data (37): Neg.  $P(Ej\mu)$  (b)*
- ```

---message from ptleg2---negative probs found
      1 for mt= 41 e= 1.244E+02

```
39. An angular distribution is negative  
*acer...monte carlo neutron and photon data (38): Neg.  $P(Ej\mu)$  (b)*
- ```

---message from ptleg2---negative probs found
      1 for mt= 91 e= 7.934E+01

```
40. An angular distribution is negative  
*acer...monte carlo neutron and photon data (39): Neg.  $P(Ej\mu)$  (b)*
- ```

---message from ptleg2---negative probs found
      1 for mt= 91 e= 9.608E+01

```
41. An angular distribution is negative  
*acer...monte carlo neutron and photon data (40): Neg.  $P(Ej\mu)$  (b)*
- ```

---message from ptleg2---negative probs found
      3 for mt= 91 e= 1.152E+02

```
42. An angular distribution is negative  
*acer...monte carlo neutron and photon data (41): Neg.  $P(Ej\mu)$  (b)*
- ```

---message from ptleg2---negative probs found
      3 for mt= 91 e= 1.179E+02

```
43. An angular distribution is negative  
*acer...monte carlo neutron and photon data (42): Neg.  $P(Ej\mu)$  (b)*
- ```

---message from ptleg2---negative probs found
     21 for mt= 91 e= 1.261E+02

```
44. An angular distribution is negative  
*acer...monte carlo neutron and photon data (43): Neg.  $P(Ej\mu)$  (b)*
- ```

---message from ptleg2---negative probs found
      2 for mt= 91 e= 1.275E+02

```
45. An angular distribution is negative  
*acer...monte carlo neutron and photon data (44): Neg.  $P(Ej\mu)$  (b)*

- message from ptleg2---negative probs found  
1 for mt= 91 e= 1.306E+02
46. An angular distribution is negative  
*acer...monte carlo neutron and photon data (45): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
69 for mt= 91 e= 1.322E+02
47. An angular distribution is negative  
*acer...monte carlo neutron and photon data (46): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
33 for mt= 91 e= 1.338E+02
48. An angular distribution is negative  
*acer...monte carlo neutron and photon data (47): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
51 for mt= 91 e= 1.353E+02
49. An angular distribution is negative  
*acer...monte carlo neutron and photon data (48): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
52 for mt= 91 e= 1.462E+02
50. An angular distribution is negative  
*acer...monte carlo neutron and photon data (49): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
2 for mt= 28 e= 9.186E+01
51. An angular distribution is negative  
*acer...monte carlo neutron and photon data (50): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
2 for mt= 28 e= 1.049E+02
52. An angular distribution is negative  
*acer...monte carlo neutron and photon data (51): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
60 for mt= 28 e= 1.061E+02
53. An angular distribution is negative  
*acer...monte carlo neutron and photon data (52): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
4 for mt= 28 e= 1.152E+02
54. An angular distribution is negative  
*acer...monte carlo neutron and photon data (53): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
40 for mt= 28 e= 1.166E+02

55. An angular distribution is negative  
*acer...monte carlo neutron and photon data (54): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
43 for mt= 28 e= 1.179E+02
56. An angular distribution is negative  
*acer...monte carlo neutron and photon data (55): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
39 for mt= 28 e= 1.193E+02
57. An angular distribution is negative  
*acer...monte carlo neutron and photon data (56): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
41 for mt= 28 e= 1.206E+02
58. An angular distribution is negative  
*acer...monte carlo neutron and photon data (57): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
3 for mt= 28 e= 1.244E+02
59. An angular distribution is negative  
*acer...monte carlo neutron and photon data (58): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
26 for mt= 28 e= 1.275E+02
60. An angular distribution is negative  
*acer...monte carlo neutron and photon data (59): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
58 for mt= 28 e= 1.291E+02
61. An angular distribution is negative  
*acer...monte carlo neutron and photon data (60): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
39 for mt= 28 e= 1.306E+02
62. An angular distribution is negative  
*acer...monte carlo neutron and photon data (61): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
111 for mt= 28 e= 1.322E+02
63. An angular distribution is negative  
*acer...monte carlo neutron and photon data (62): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
49 for mt= 28 e= 1.338E+02
64. An angular distribution is negative  
*acer...monte carlo neutron and photon data (63): Neg.  $P(Ej\mu)$  (b)*



- message from ptleg2---negative probs found  
34 for mt= 28 e= 1.353E+02
65. An angular distribution is negative  
*acer...monte carlo neutron and photon data (64): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
36 for mt= 28 e= 1.369E+02
66. An angular distribution is negative  
*acer...monte carlo neutron and photon data (65): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
35 for mt= 28 e= 1.384E+02
67. An angular distribution is negative  
*acer...monte carlo neutron and photon data (66): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
48 for mt= 28 e= 1.400E+02
68. An angular distribution is negative  
*acer...monte carlo neutron and photon data (67): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
62 for mt= 28 e= 1.415E+02
69. An angular distribution is negative  
*acer...monte carlo neutron and photon data (68): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
1 for mt= 41 e= 6.757E+01
70. An angular distribution is negative  
*acer...monte carlo neutron and photon data (69): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
51 for mt= 41 e= 1.260E+02
71. An angular distribution is negative  
*acer...monte carlo neutron and photon data (70): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
45 for mt= 41 e= 1.275E+02
72. An angular distribution is negative  
*acer...monte carlo neutron and photon data (71): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
36 for mt= 41 e= 1.291E+02
73. An angular distribution is negative  
*acer...monte carlo neutron and photon data (72): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
46 for mt= 41 e= 1.306E+02

74. An angular distribution is negative  
*acer...monte carlo neutron and photon data (73): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
3 for mt=649 e= 6.592E+01
75. An angular distribution is negative  
*acer...monte carlo neutron and photon data (74): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
1 for mt=649 e= 6.757E+01
76. An angular distribution is negative  
*acer...monte carlo neutron and photon data (75): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
35 for mt=649 e= 9.608E+01
77. An angular distribution is negative  
*acer...monte carlo neutron and photon data (76): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
4 for mt=649 e= 9.714E+01
78. An angular distribution is negative  
*acer...monte carlo neutron and photon data (77): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
3 for mt=649 e= 9.819E+01
79. An angular distribution is negative  
*acer...monte carlo neutron and photon data (78): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
1 for mt=649 e= 9.887E+01
80. An angular distribution is negative  
*acer...monte carlo neutron and photon data (79): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
2 for mt=649 e= 1.001E+02
81. An angular distribution is negative  
*acer...monte carlo neutron and photon data (80): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
1 for mt=649 e= 1.037E+02
82. An angular distribution is negative  
*acer...monte carlo neutron and photon data (81): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
47 for mt=649 e= 1.049E+02
83. An angular distribution is negative  
*acer...monte carlo neutron and photon data (82): Neg.  $P(Ej\mu)$  (b)*

- message from ptleg2---negative probs found  
73 for mt=649 e= 1.061E+02
84. An angular distribution is negative  
*acer...monte carlo neutron and photon data (83): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
27 for mt=649 e= 1.073E+02
85. An angular distribution is negative  
*acer...monte carlo neutron and photon data (84): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
37 for mt=649 e= 1.085E+02
86. An angular distribution is negative  
*acer...monte carlo neutron and photon data (85): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
33 for mt=649 e= 1.097E+02
87. An angular distribution is negative  
*acer...monte carlo neutron and photon data (86): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
36 for mt=649 e= 1.109E+02
88. An angular distribution is negative  
*acer...monte carlo neutron and photon data (87): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
2 for mt=649 e= 1.121E+02
89. An angular distribution is negative  
*acer...monte carlo neutron and photon data (88): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
17 for mt=649 e= 1.133E+02
90. An angular distribution is negative  
*acer...monte carlo neutron and photon data (89): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
72 for mt=649 e= 1.152E+02
91. An angular distribution is negative  
*acer...monte carlo neutron and photon data (90): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
43 for mt=649 e= 1.166E+02
92. An angular distribution is negative  
*acer...monte carlo neutron and photon data (91): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
12 for mt=649 e= 1.179E+02

93. An angular distribution is negative  
*acer...monte carlo neutron and photon data (92): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
31 for mt=649 e= 1.193E+02
94. An angular distribution is negative  
*acer...monte carlo neutron and photon data (93): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
59 for mt=649 e= 1.206E+02
95. An angular distribution is negative  
*acer...monte carlo neutron and photon data (94): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
35 for mt=649 e= 1.220E+02
96. An angular distribution is negative  
*acer...monte carlo neutron and photon data (95): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
35 for mt=649 e= 1.234E+02
97. An angular distribution is negative  
*acer...monte carlo neutron and photon data (96): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
41 for mt=649 e= 1.247E+02
98. An angular distribution is negative  
*acer...monte carlo neutron and photon data (97): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
83 for mt=649 e= 1.261E+02
99. An angular distribution is negative  
*acer...monte carlo neutron and photon data (98): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
66 for mt=649 e= 1.274E+02
100. An angular distribution is negative  
*acer...monte carlo neutron and photon data (99): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
3 for mt=649 e= 1.182E+02
101. An angular distribution is negative  
*acer...monte carlo neutron and photon data (100): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
2 for mt=649 e= 1.244E+02
102. An angular distribution is negative  
*acer...monte carlo neutron and photon data (101): Neg.  $P(Ej\mu)$  (b)*

- message from ptleg2---negative probs found  
29 for mt=649 e= 1.260E+02
103. An angular distribution is negative  
*acer...monte carlo neutron and photon data (102): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
48 for mt=649 e= 1.275E+02
104. An angular distribution is negative  
*acer...monte carlo neutron and photon data (103): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
38 for mt=649 e= 1.291E+02
105. An angular distribution is negative  
*acer...monte carlo neutron and photon data (104): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
27 for mt=649 e= 1.306E+02
106. An angular distribution is negative  
*acer...monte carlo neutron and photon data (105): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
35 for mt=649 e= 1.338E+02
107. An angular distribution is negative  
*acer...monte carlo neutron and photon data (106): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
42 for mt=649 e= 1.353E+02
108. An angular distribution is negative  
*acer...monte carlo neutron and photon data (107): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
38 for mt=649 e= 1.369E+02
109. An angular distribution is negative  
*acer...monte carlo neutron and photon data (108): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
26 for mt=649 e= 1.384E+02
110. An angular distribution is negative  
*acer...monte carlo neutron and photon data (109): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
13 for mt=649 e= 1.400E+02
111. An angular distribution is negative  
*acer...monte carlo neutron and photon data (110): Neg.  $P(Ej\mu)$  (b)*
- message from ptleg2---negative probs found  
55 for mt=649 e= 1.415E+02

112. An angular distribution is negative  
*acer...monte carlo neutron and photon data (111): Neg.  $P(Ej\mu)$  (b)*

```
---message from ptleg2---negative probs found
57 for mt=649 e= 1.431E+02
```

113. An angular distribution is negative  
*acer...monte carlo neutron and photon data (112): Neg.  $P(Ej\mu)$  (b)*

```
---message from ptleg2---negative probs found
70 for mt=649 e= 1.446E+02
```

114. An angular distribution is negative  
*acer...monte carlo neutron and photon data (113): Neg.  $P(Ej\mu)$  (b)*

```
---message from ptleg2---negative probs found
46 for mt=649 e= 1.462E+02
```

115. An angular distribution is negative  
*acer...monte carlo neutron and photon data (114): Neg.  $P(Ej\mu)$  (b)*

```
---message from ptleg2---negative probs found
45 for mt=649 e= 1.478E+02
```

- **acelst** Warnings:

1. The incident energy grid is not monotonic for this angular distribution  
*0: Bad Ang. Dist.*

```
ACELST WARNING - Processing Ang.Dist.MT          2
E-grid non-monotonic 7.000000000E+01 7.000000000E+01
```